

AGENDA

Speakers:

Marialaura Bancheri (CNR), Angelo Basile (CNR), Federica Cavaliere (EMM), Giovanni Battista Chirico (University Napoli), Giuliano Ferraro (University Napoli), Anca Florea (MODIS), Giuliano Langella (University Napoli), Piero Manna (CNR), Antonio Mileti (University Napoli), Edzer Pebesma (University of Muenster), Alessia Perego (University Milano), Fabio Terribile (University Napoli), Karl Vanderlinden (IFAPA), Simona Vingiani (University Napoli), Francesco Vuolo (University BOKU)

	Speakers	Topic	Time	Content	
14 February 2022, Monday	Terribile	Terribile, Prebeck, Ferraro	Introduction to the course	09:00- 10:45	- Housekeeping rules - The rationale behind this Earth Critical Zone (ECZ) course, - LandSupport project: from policy needs to operational tools - Registration to the Landsupport platform
		BREAK			
		Langella	Geospatial Cyber- Infrastructures	11:00- 11:30	Data-model-GUI pipelines: from general to the LandSupport implementation
		Ferraro, Mileti	Practical demonstration of the geospatial LANDSUPPORT platform	11:30- 13:00	Let's start from the end: hands- on session on the use of Geospatial tools produced after the LANDSUPPORT Horizon 2020 project. Fill-in questionnaire
15 February 2022, Tuesday	Langella	Cavaliere, Mileti	Basic knowledge RECAP	09:00- 10:45	Recap content developed on the base of questionnaires filled-in by students
	BREAK				
	Manna	Vingiani	ECZ dataset	11:00- 13:00	- Geology, geomorphology, hydrogeology, pedology - Soil profiles to soil analysis - ECZ (soil, geology,..) databases
16 February 2022,	Vuolo	Chirico	ECZ large dataset	09:00- 10:45	- Climate data
		BREAK			

Wednesday		Vuolo	Earth Observation	11:00-13:00	Remote sensing, RS derived indicators, Copernicus data: LULC and HRL (e.g. IMP, Forests, ...)	
17 February 2022, Thursday	Vuolo		EO Practical	09:00-10:45	EO practical	
		BREAK				
			EO Practical	11:00-13:00	EO practical	
		Pebesma	ECZ dataset: datacube (afternoon seminar)	14:30-16:00	Intro to R and R-Spatial; an insight on datacubes	
18 February 2022, Friday	Basile	Basile	Soil hydrology: basic	09:00-10:45	Variables and hydraulic properties. The scale problem.	
		BREAK				
		Basile	ECZ modelling	11:00-13:00	Focus on water balance in the Soil - Plant - Atmosphere (SPA) system	
21 February 2022, Monday	Basile	Vanderlin den	Field applications	09:00-10:45	Modelling requires field experiments: case studies on soil management for preventing soil degradation processes. Focus on geophysical techniques	
		BREAK				
		Perego Bancheri	ECZ modelling: focus on crop growth	11:00-13:00	- An integrated approach to crop growth, nitrate leaching and carbon stock change modelling - A demonstration of the crop growth and best practices tools on LANDSUPPORT	
22 February 2022, Tuesday	Pebesma		ECZ Geospatial modelling	09:00-10:45	Static spatial data (raster, vector); geostatistics, Machine learning for spatial prediction	
		BREAK				
			Hands-on ECZ Geospatial modelling	11:00-13:00	Hands-on session	

23 February 2022, Wednesday	Pebesma		ECZ Geospatial modelling	09:00-10:45	Time-varying spatial data; raster and vector data cubes; Recap on ECZ Geospatial modelling
		BREAK			
			Hands-on ECZ Geospatial modelling	11:00-13:00	Hands-on ECZ Geospatial modelling

24 February 2022, Thursday	Langella	Cavaliere, Bancheri, Langella	Build your pipe Solute transfer time in the ECZ	09:00-10:45	<ul style="list-style-type: none"> - Gentle outline of the day - Introduction to Jupyter - Retrieve meteo data - Simplified Transfer Function Model (TFM)
		BREAK			
		Cavaliere, Bancheri, Langella	Build your pipe Solute transfer time in the ECZ	11:00-13:00	<ul style="list-style-type: none"> - Build a simple preprocessor-model-postprocessor pipe - TFM simulation in N geospatial points: parallel computing using COMPSs - The LandSupport tools based on full TFM - Final considerations and students feedbacks

25 February 2022, Friday	Langella	Cavaliere Mileti	Build your pipe Soil sealing quantification	09:00-10:45	<ul style="list-style-type: none"> - Gentle outline of the day - Jupyter multi language support - Build and/or get you RoI - From desktop GIS to postgis requests (vector geodata)
		BREAK			
		Cavaliere Mileti	Build your pipe Soil sealing quantification	11:00-13:00	<ul style="list-style-type: none"> - WCS request via user interface (raster geodata) - WCS request via code - Machine learning in land use applications - Calculation of land take and fragmentation - LandSupport tools (LTM, Fragmentation) - Final considerations and students feedbacks